



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,309	06/27/2001	Peter D'Antonio	D'ANTONIO-15	1645

7590 11/12/2003

H. JAY SPIEGEL  
P.O. BOX 444  
Mount Vernon, VA 22121

EXAMINER
----------

MCCLLOUD, RENATA D

ART UNIT	PAPER NUMBER
----------	--------------

2837

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/891,309

Applicant(s)

D'ANTONIO ET AL.

Examiner

Renata McCloud

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 9-12, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the amendment filed 03 October 2003, the following has occurred:  
Claims 20-24 have been cancelled.

### ***Double Patenting***

2. Claim 16 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 15. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims are 1-5, 7, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by D'Antonio et al (U.S. 5,193,318).

**Claim 1:** a sound diffuser with low frequency sound absorption (e.g. Fig. 1) having a front surface configured to diffuse sound waves (e.g. Fig. 2:21) and means for receiving sound waves via the front surface below a desired cut-off frequency (e.g. Fig. 2:32).

**Claim 2:** a plurality of divided or non-divided parallel wells (e.g. Fig. 1: wells 27 and 29 divided by dividers 23 and 25).

**Claim 3:** the front surface having a geometrical or irregular shaped pattern (e.g. Fig. 1: surface has a geometrical shape).

**Claim 4:** the shapes separated by slots or holes (e.g. Fig. 2:32 is a hole that separates shapes adjacent to it).

**Claim 5:** receiving means between the slots or holes (e.g. Fig. 2:32 is a hole for sound to pass through).

**Claim 7:** the receiving means having a plurality of open slots (e.g. Fig. 2:30).

**Claims 15 and 16:** the slots providing low frequency absorption (e.g. Col. 3:14-17).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Antonio et al as applied to claim 1 above, in view of McGrath (U.S. Patent 6,015,026).

**Claims 6:** D'Antonio et al teach the limitations of claim 1. Referring to claim 6, D'Antonio et al do not teach the front surface comprised of a compound curved shaped. McGrath teaches a front surface comprised of a compound curved shaped (e.g. Figure 1, Item 12).

**Claim 19:** D'Antonio et al teach the limitations of claim 1. Referring to claim 19, D'Antonio et al do not teach a crossover frequency below which sound is absorbed and above which diffusion takes place. McGrath teaches a crossover frequency below which sound is absorbed and above which diffusion takes place (e.g. Figure 24).

*It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the D'Antonio et al's diffuser to include the teachings of McGrath. The advantage of this would be a cost efficient, easy to install acoustic diffuser that absorbs a wide range of low frequencies, and is reflective over a range of mid-range frequencies.*

7. Claims 8, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Antonio et al as applied to claim 1 above, in view of Fries (U.S. Patent 5,422,446).

**Claim 8:** D'Antonio et al teach the limitations of claim 1. Referring to claim 8, D'Antonio et al do not teach the receiving means having a plurality of holes. Fries teaches receiving means having a plurality of holes (e.g. Figure 1, Item 9).

**Claim13:** D'Antonio et al teach the limitations of claim 1. Referring to claim 13, D'Antonio et al do not teach an absorptive material over the rear of the body. Fries teaches an absorptive material over the rear of the body (e.g. Figure 2, Item 7).

**Claim 14:** D'Antonio et al teach the limitations of claim 1. Referring to claim 14, D'Antonio et al do not teach the absorptive material made of a porous material. Fries teaches an absorptive material made of a porous material (e.g. Column 3, Line 66).

*It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the D'Antonio et al's diffuser to include the teachings of Fries. The advantage of this would be an acoustic diffuser that guides sound through its holes and has control over sound waves passing through.*

#### ***Allowable Subject Matter***

8. Claims 9-12, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art made of record fails to teach a diffuser with a first set of large holes and a second set of small holes and with slots having a width of 0.1 to 1 mm.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims1-20 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that D'Antonio et al is not an appropriate reference, 35 U.S.C. 102 (b) states that a person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States. Although applicant D'Antonio is co-Applicant in cited reference D'Antonio et al (4,964,486), the reference was patented well over one year prior to the date of this application. This also applies to newly cited references D'Antonio et al (U.S. 5,193,318) and D'Antonio et al (4,821,839).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Huszty et al (U.S. Patent 3,862,366) teach a sound radiation system with a row of large holes and a row of small holes and D'Antonio et al (U.S. 4,821,839).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (703) 308-1763. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703) 308-3370. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Application/Control Number: 09/891,309  
Art Unit: 2837

Page 7

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Renata McCloud  
Examiner  
Art Unit 2837

RDM

  
**ROBERT NAPPI**  
**SUPERVISORY PATENT EXAMINER**